



EFFECTS OF AN EDUCATIONAL INTERVENTION ON THE PREOPERATIONAL ANXIETY OF PATIENTS CANDIDATES FOR ORTHOPEDIC SURGERY

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ABSTRACT

Surgery is an anxious experience in any form because it is a threat for body solidarity and even life. Various pharmaceutical and non-pharmaceutical methods were suggested to decrease patients' anxiety such as relaxation methods, massage therapy, music therapy, Quran voice and etc. purpose of this study is investigating effect of an educational intervention on the preoperational anxiety of patients candidates for orthopedic surgery. In a clinical trial double blind study, 50 patients were divided into two groups with 25 subjects; control group received 2mg oral diazepam one night before surgery and case group were trained. Information was studied by Scpilberger anxiety questionnaire. In study group anxiety was significantly decreased and in control group anxiety was decreased on surgery day but comparing anxiety of both groups in preoperational morning showed no significant difference ($p > 0.05$). Results of this method had no significant difference with diazepam results; therefore by replicating study and achieving similar results training method can be used as an alternative for pharmaceutical method to decrease medicines side-effects.

Key Words:- Educational Intervention, Anxiety, Orthopedic Surgery.

INTRODUCTION

Surgery is an anxious experience in any form because it is a threat for body solidarity and even life (Uddin *et al.*, 2002). Surgery is an intentional change in body anatomic structures in order to provide comfort, relief or resolve pathologic and repair traumatic damages.

One of commonest preoperational problems is anxiety (Dugas and Knorr, 1995). About 11 to 80% of adults experience preoperational anxiety (Caumo *et al.*, 2003). Anxiety is a vague feeling, concern or distress which is created by exposing to unknown condition, death fear, discomfort, fear of post-operational pain, changes in shape or actions of body, increasing dependence, concern for family or potential changes in life style. One of known factors for anxiety is fear from post-operational pain. Anxiety begins when patient become aware of surgery and

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reaches its peak during hospitalization (Phipps *et al.*, 2003; Padmanabhan *et al.*, 2005; Lillis *et al.*, 2010). If it is not controlled or lasts long it will increase protein decomposition, reduces recovery, increase infection, changes immunologic reaction, imbalance in electrolytes and fluids and sleep. These factors increase length of hospitalization and patients discharge. Preoperational anxiety causes gastric problems and reduces patients' satisfaction from treatment and nursing (Hong and Oh, 2005; Caumo *et al.*, 2003) and prevents post-operational recovery. High preoperational anxiety is accompanied with high post-operational prevalence, reduction in resistance against infection, increase in use of analgesic and delay in improving lesions with negative effects on patients' moods (Frazier *et al.*, 2003; Montgomery and Bovbjerg, 2004; Granot and Ferber, 2005; Kindler *et al.*, 2000). One of effective factors on post-operational nausea and vomiting which is less considered is preoperational anxiety (Karakhuen, 2003; Doran and Halm, 2010). In fact advantages of reducing anxiety and effect of this reduction on better recovery, faster care, reduced medicines during anesthesia, better pain tolerance and faster discharge which lead to reduction in costs and side effects have been proved (Mahfouzi and HASANI, 2000).

Various pharmaceutical and non-pharmaceutical methods were suggested to decrease patients' anxiety such as relaxation methods, massage therapy, music therapy, Quran voice and etc (Vanderboom, 2007; Moradipannah *et al.*, 2009; Jafari *et al.*, 2012). Among them role of analgesic technician in consulting and premedication is known and play his role by prescribing one or more medicines as premedication in reducing anxiety (Rostamnejadi and Karimi, 2002).

One of common premedication is benzodiazepine and diazepam is one of most used premedication which can be applied orally or by infusion (Berbel *et al.*, 2006). But it is clear that each chemical medicine has side effects; therefore, in the case of using non-pharmaceutical methods we can prevent morbidities caused by medicines. One of non-pharmaceutical methods is preoperational training for patients. In addition to researches which show that giving preoperational information to patients reduces their anxiety, other research have reported that training patients make them more sensitive and creates high anxiety and pain (Sjöling *et al.*, 2003). But researchers have not found solid evidences for this; therefore, purpose of this study is investigating effect of training on patients for preventing preoperational pain in patients candid for orthopedic surgery.

METHOD

In a clinical trial duple blind study, 50 patients in

age range 18-60 years old candid for orthopedic surgery in Imam Khomeini and Razi hospitals in Ahvaz entered study during 2012-2013. Inclusion characteristics were hospitalization one day before surgery, lack of mental disease, lack of addiction to opium or heavy sedatives, lack of severe pain because of disease, using Persian language, lack of surgery in other parts of body and lack of anti-anxiety medicines. Patients were divided into two groups with 25 subjects; control group received 2mg oral diazepam one night before surgery and case group were trained. Information were studied by Scpilberger anxiety questionnaire which its validity and reliability was validated in Iran [35] and demographic information form, blood pressure and pulse rate were completed by experienced experts who were not aware from method in two stages before prescription and surgery. It should be mentioned that training was such that face to face training was given in 20-30 minutes for study group one night before surgery.

Training content included type of surgery, explaining pain factors and discomforting feelings before surgery, their influence on post-operational pain, importance of pain control and premature prevalence of activities out of bed, reducing pain with non-pharmaceutical medicines such as music therapy, mind diversion methods, Quran verses and praying. In order to analyze Scpilberger questionnaire after extracting pretest and posttest questionnaires patients' anxiety was measured in three levels: 20-40 medium anxiety, 40-60 low anxiety and 60-80 severe anxiety. In order to analyze data chi-square test, Fisher test, Man-Whitney test and Willcokson test were used in SPSS 16.

RESULTS

Results of this study show that patients in both groups have not significant statistical differences regarding demographic characteristics and in the beginning of study (table 1). In study group anxiety was significantly decreased and in control group anxiety was decreased on surgery day but comparing anxiety of both groups in preoperational morning showed no significant difference ($p > 0.05$) (fig 1 and fig 2). Hemodynamic comparison in both groups showed that there is no significant difference between groups; of course, in both groups pulse rate, systolic and diastolic blood pressure was significantly near to normal condition.

DISCUSSION

As results showed patient training could reduce patients' stress in surgery morning. By reviewing research it can be found that there are numerous studies about effect of training on preoperational anxiety. For example,

Belleau *et al.* (Belleau *et al.*, 2001) conducted a study about effect of training intervention on preoperational anxiety on women waiting for mastectomy in Canada. Data gathering tool was a questionnaire and situational anxiety inventory (SAI). Results after intervention showed that anxiety level in study group patients was significantly lower than control group. Morrel (Morrell, 2001) study titles "Effect of preoperational Structured Training on patients' anxiety in cataract surgery list" showed that preoperational training had significant effect in reducing patients' anxiety who undergone cataract surgery. Naemi Hosseini *et al.* in their study titled "Comparing two training methods on anxiety and life quality of asthma patients" showed that both methods were same in reducing mean anxiety. Findings of Yeganeh Khah *et al.* (Yeganehkhah *et al.*, 2012) in their research titled "Comparison of training methods effect on reducing anxiety of patients suffering stroke" confirmed that different training methods were

effective in apparent reduction of anxiety in patients suffering acute stroke. Results of these studies were consistent with our study. In contrary with our results (Asilioglu and Celik, 2004) in their research titled "preoperational training on patients' anxiety who undergone bypass surgery" showed that there was no significant statistical difference in anxiety scores between both groups. In another study, Deyirmenjian (2006) did not find significant results with preoperational training in patients candid for cardiac surgery. An important point in this study is that pharmaceutical and non-pharmaceutical methods were synchronously evaluated and capability of non-pharmaceutical method was considered. This study has pointed to other advantages of non-pharmaceutical methods by close hemodynamic evaluation and suggests other researches to conduct researches to evaluate non-pharmaceutical methods on patients' hemodynamic.

Table 1. Preoperative characteristics (No Statistically Significant Difference)

Variable	Case group	Control group	P Value
Age(mean+SD)	28.89+6.96	29.88+6.50	0.483
Male sex	12	15	0.526
Weight(mean+SD)	64.78+11.72	62.58+9.45	0.330

Fig 1. Preintervention anxiety

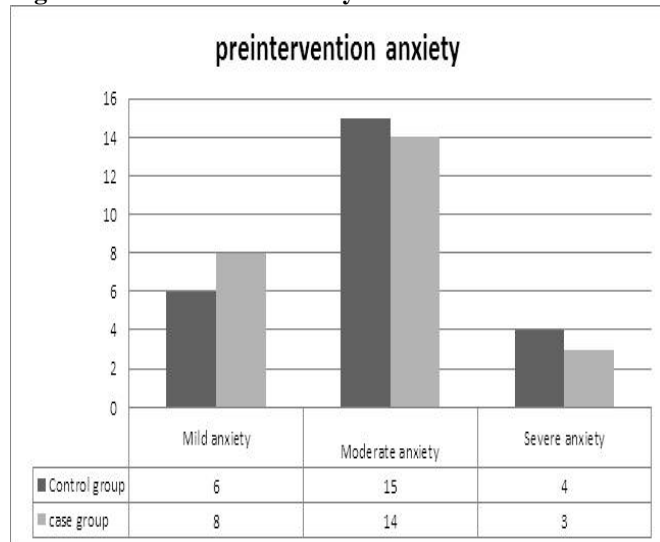
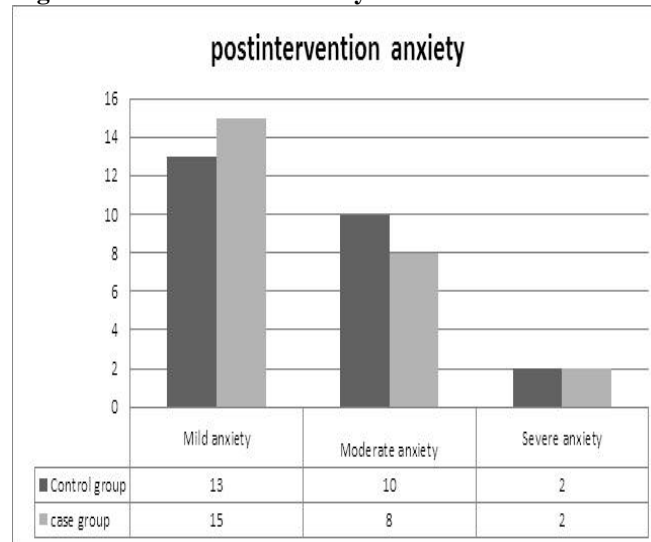


Fig 2. Post intervention anxiety



CONCLUSION

In this study non-pharmaceutical method i.e. educational intervention patients could prevent preoperational anxiety in patients. Results of this method had no significant difference with diazepam results; therefore by replicating study and achieving similar results

training method can be used as an alternative for pharmaceutical method to decrease medicines side-effects.

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REFERENCES

- Asilioglu K & Celik SS. The effect of preoperative education on anxiety of open cardiac surgery patients. *Patient education and counseling*, 53, 2004, 65-70.
- Ahfouzi A & Hasani MM. The effect of Midazolam in reducing anxiety of surgical patients. *Scientific Journal of Forensic Medicine*, 6, 2000, 0-0.
- Belleau F, Hagan L & Masse B. Effects of an educational intervention on the anxiety of women awaiting mastectomies. *Canadian oncology nursing journal= Revue canadienne de nursing oncologique*, 11, 2001, 172.
- Berbel P, Moix J & Quintana S. Music versus diazepam to reduce preoperative anxiety: a randomized controlled clinical trial. *Revista espanola de anestesiologia y reanimacion*, 54, 2006, 355-358.
- Caumo W, Ferreira MBC & Cardoso B. Perioperative anxiety: psychobiology and effects in postoperative recovery. *Pain Clinic*, 15, 2003, 87-101.
- Deyirmenjian M, Karam N & Salame P. Preoperative patient education for open-heart patients: a source of anxiety? *Patient Education and counseling*, 62, 2006, 111-117.
- Doran K & Halm MA. Integrating Acupressure to Alleviate Postoperative Nausea and Vomiting. *American Journal of Critical Care*, 19, 2010, 553-556.
- Dugas B & Knorr E. Nursing foundations. *Appleton and Lange Canada. Scarborough, Ontario*. 1995.
- Frazier SK, Moser DK, Daley LK, McKinley S, Riegel B, Garvin BJ & AN K. Critical care nurses' beliefs about and reported management of anxiety. *American Journal of Critical Care*, 12, 2003, 19-27.
- Granot M & Ferber SG. The roles of pain catastrophizing and anxiety in the prediction of postoperative pain intensity: a prospective study. *The Clinical journal of pain*, 21, 2005, 439-445.
- Hong JY & OH JI. Effects of preoperative anxiety on gastric fluid acidity and volume. *Journal of Korean medical science*, 20, 2005, 232-235.
- Jafari H, Zeydi AE, Khani S, Esmaili R & Soleimani A. The effects of listening to preferred music on pain intensity after open heart surgery. *Iranian journal of nursing and midwifery research*, 17, 2012, 1.
- Karakhuen N. Effects of health education program on preoperative anxiety among abdominal surgical patient, 2003.
- Kindler CH, Harms C, Amsler F, Ihde-scholl T & Scheidegger D. The visual analog scale allows effective measurement of preoperative anxiety and detection of patients' anesthetic concerns. *Anesthesia & Analgesia*, 90, 2000, 706-712.
- Lillis C, Lemone P, Lebon M & Lynn P. *Study Guide for Fundamentals of Nursing: The Art and Science of Nursing Care*, Wolters Kluwer Health, 2010.
- Montgomery GH & Bovbjerg DH. Presurgery distress and specific response expectancies predict postsurgery outcomes in surgery patients confronting breast cancer. *Health Psychology*, 23, 2004, 381.
- Moradipناه F, Mohammadi E & Mohammadil A. 2009. Effect of music on anxiety, stress, and depression levels in patients undergoing coronary angiography. *Eastern Mediterranean Health Journal*, 15, 639-647.
- Morrell G. Effect of structured preoperative teaching on anxiety levels of patients scheduled for cataract surgery. *Insight-the Journal of the American Society of Ophthalmic Registered Nurses*, 26, 2001, 4-9.
- Padmanabhan R, Hildreth A & Laws D. A prospective, randomised, controlled study examining binaural beat audio and pre-operative anxiety in patients undergoing general anaesthesia for day case surgery. *Anaesthesia*, 60, 2005, 874-877.
- Phipps WJ, Monahan FD, Sands JK, Marek J & Neighbors M. *Medical-surgical nursing: health and illness perspectives*, Mosby. 2003 .
- Rostamejadi A & Karimi Z. A study on oral ketamine premedication effect on anxiety of parental separation in 2-7 y/o children for elective surgery. *Arak medical university journal*, 2002.
- Sjöling M, Nordahl G, Olofsson N & Asplund K. The impact of preoperative information on state anxiety, postoperative pain and satisfaction with pain management. *Patient Education and Counseling*, 51, 2003, 169-176.
- Uddin I, Kurkuman A & Jamil T. Pre-operative anxiety in patients admitted for elective surgery in King Saud Hospital, Unaizah, Al-Qassim, Kingdom of Saudi Arabia. *Pakistan Journal Of Medical Sciences*, 18, 2002, 306-310.
- Vanderboom T. Does music reduce anxiety during invasive procedures with procedural sedation? An integrative research review. *Journal of Radiology Nursing*, 26, 2007, 15-22.
- Yeganehkhah M, Abedini A, Akbari H & Ziyayi Nezhad M. Comparison of Different Methods of Education on Reducing the Anxiety of Patients with Myocardial Infarction. *Iran Journal Of Nursing (IJN)*, 24, 2012, 36-44.